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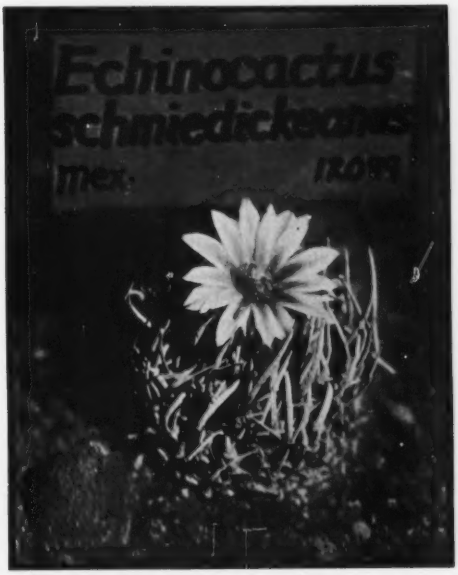

Photo by Mr. Wright

Flowering in garden of Mrs. John D. Wright, Santa Barbara. See page 376

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Sedum mexicanum, Britton

Professor Bailey's account of this Stonecrop in the June issue of this Journal, leads me to comment upon the original of the type material used by me in framing its description, published in 1899 (Bull. N. Y. Bot. Gard: *1:* 257). It was grown from material from the City of Mexico, brought back by Mrs. Britton and Professor Rusby on the occasion of their accompanying Provost Pepper of the University Pennsylvania, to a medical congress held there in 1896, when Mrs. Britton turned Dr. Pepper's presidential address into Spanish, and they were otherwise active in United States-Mexican amenities, and in botanical work. Subsequent studies by Mr. Praeger (Journal of Botany *55:* 214. 1917) apparently demonstrated that the plant cannot have been native there, that it was in cultivation, in Europe before 1899, and that its natural habitat is probably somewhere in the Old World. In so far as I know such natural habitat has not yet been discovered; I have been hoping that an older available specific name than *mexicanum* might be found for it. I understand that it is *Sedum sarmentosum* of Masters, but not of Bunge.

In 1914 I observed it growing thriftily in cultivation in Bermuda (Fl. Berm. 160), but did not ascertain where it had been obtained. In 1923 plants of the Mexican material were sent to Mr. Arthur S. Fairchild for experimentation in his garden at Louisenhoj, St. Thomas, but succumbed after a few years in this tropical environment. Plants from the Mexican material are still growing well, under glass, at the New York Botanical Garden.

—*N. L. Britton.*

Flowering plant of *Pleiospilos bolusii* (Hook-fil) N. E. Br. In collection of Archibald Burns, San Rafael. Natural size.

PLEIOSPILOS BOLUSII

By JAMES WEST

If one were asked to name a succulent filling all the following specifications: One rare enough to be always notable, yet not hopelessly unattainable; both remarkable in form and beautiful in flower; an extraordinary curiosity, yet easy to grow; compact enough for a window-box, yet large enough to show up in the garden—in short, the perfect succulent—, none would seem to answer better than the subject of this article.

Pleiospilos bolusii N. E. Br. (*Mesembryanthemum bolusii* Hook. fil.) has been known for nearly half a century. Discovered by Harry Bolus[1] in South Africa in the seventies, it flowered for the first time in England in the famous Peacock collection in 1882, when it was sent to Kew and described and figured in the BOTANICAL MAGAZINE (t. 6664) by J. D. Hooker.

For years it was very rare in cultivation. Only

[1]A relative of the present distinguished curator of the Bolus Herbarium in Cape Town, Mrs. H. M. Louisa Bolus.

recently, when seed became freely available, and the plant was found to be easily grown, did it attain its present great popularity both here and abroad. Although now found in most good collections, it never fails to draw the interest of visitors. Its truly uncanny resemblance to a fragment of rock is so great that few persons can resist the temptation to convince themselves by their sense of touch it is "real." Many a specimen returns from a show bearing the scars of inquisitive thumbnails, not only of children, be it said, but also of adults, who ought to know better!

The genus *Pleiospilos* (from the Greek *pleios* =more, full and *spilos*=spot, dot referring to the conspicuously dotted leaf) was segregated from *Mesembryanthemum* by N. E. Brown in the course of his revision of the genus (Gardeners Chronicle, London, LXXX p. 89, 1926).

It was founded on the following characters:

PLANT stemless, tufted.

LEAVES one (when in growth, two) pair to each growth, firm, thick, not more than twice as long as broad, grey-green with prominent pellucid dark-green dots.

FLOWERS solitary or 2-4 to a growth, terminal between leaves, sessile, bracteate.

CALYX 5-6-lobed nearly down to union with the ovary.

PETALS numerous, free, linear, arising around margins of the top of ovary.

STAMENS numerous, erect.

STIGMAS 9-14, filiform, nearly as long as stamens when mature; no style.

OVARY 9-14-celled, placentas on center of outer wall.

CAPSULES sub-hemispherical, valves reflexed when wetted, each with a pair of parallel expanding-keels adnate up to middle of valve, then free, the free part bearing a triangular membraneous wing, these wings unite with wings of adjacent valves in pairs or become free and stand erect between valves. Cells acutely roofed by rather rigid cell-wings or separated elements of the cell-partitions, turned back at opening and somewhat resembling the mouth of a trumpet, so that the whole series of roofs are raised into a crown-like structure above the level of the expanding-keels; tubercles absent.

Here it must be mentioned that in the future *Pleiospilos* may have to be united with the closely related genus *Punctillaria*. In ZEITSCHRIFT FUER SUKKULENTENKUNDE p. 22, 1927, Schwantes maintains that the fruit is virtually identical in both genera, therefore unites the species of *Punctillaria* with *Pleiospilos*. Brown (in Gard. Chr. p. 492, 1928) replies to this that, while the two genera were separated on the presence of tubercles in *Punctillaria* and their absence in *Pleiospilos*, he has indeed come to the conclusion that the absence or presence of tubercles is not always a good generic character (varying in otherwise undoubtedly valid genera like *Disphyma*); that, however, if the two genera were in the future to be united, then *Punctillaria*, as both the older (in MS) and the larger genus should have precedence. Schwantes seems recently to have agreed with this, making *Pleiospilos* a synonym of *Punctillaria* instead of vice versa, as before.

So that whosoever wishes is henceforth free to call the species of Pleiospilos, *Punctillaria*. For the present, however, and until the matter is definitely settled, we prefer to keep on calling our plant *Pleiospilos bolusii*, as it is one of the few new names that has become horticulturally current with us, and a change at this time would only tend to confusion.

Pleiospilos bolusii x.7

By the amateur not interested in botanical minutiae the two genera can be told apart by the following points: While both genera have leaves of quite similar texture, firm, grey-green, with dark-green dots, the Punctillarias are invariably more strongly tufted plants, have more than one or two leaf-pairs to a growth at one time, while the individual leaves are longer and more slender in proportion, with a distinct tendency to turn red on margins and keels.

Our illustrations will give a very good idea of the appearance of *P. bolusii* to those who have not seen the plant. The great bulge of the under side of the leaf outward below the tip, giving it somewhat the shape of a slipper or wooden shoe, is very characteristic. The exact geometrical regularity of younger plants is no less striking than the extreme ruggedness of appearance developed in later stages, especially of plants grown in the open. By the irregular wrinkling and pitting of the outer leaf-surface, by the purplish-brown tinge acquired in exposure and by various accidents of growth the similarity to rock-fragments becomes more and more evident, until it is quite difficult, even in one's own garden, to distinguish the plants from the surrounding rock. The photograph of the plant in flower shows this well. At one time we had a potted specimen, around which some pieces of reddish rock had been placed for surface drainage (without any ulterior design of matching the plant). The way in which, after some months, the plant simulated the roc[illegible]e would tempt

anyone to a belief in some direct influence of environment according to the Smuts-Marlow theory.[2]

Incidentally it may be mentioned that this perfect mimicry certainly does not seem to protect the plants in nature, for they are reported to be in danger of extermination at home by grazing goats and other livestock. It would be rather peculiar if the native herbivores such as antelopes, etc., should have been less able to penetrate beneath the disguise than introduced animals. The nearly related *Punctillaria magnipunctata* seems to be relished by tortoises, which accounts for its Boer name of *Schildpadkost*= tortoise-food. With us *P. bolusii,* like several other mimicry-species, has a peculiar attraction for birds, which love nothing better than to take big pecks out of one's prize specimens.

Normally the plant never has more than two pairs of leaves to a growth at any one time. As the older pair matures it begins to wither and shrink while the younger one enlarges. This is at first erect, the two leaves being closely appressed at their inner (i.e. morphologically upper) surfaces, so as to present the appearance of a single body (see photograph of non-flowering plant). Later they gape more or less until, when the following pair begins to emerge, they are spread more or less flat. Mature plants show considerable individuality, so that in time no two specimens resemble each other exactly, due to the greater or less vigor of growth of each leaf, a varying degree of spreading, variations in the amount of wrinkling, as well as other accidents of growth, crowding, injuries, etc. These irregularities contribute greatly to the rock-like appearance. Each growth may in time divide in two by the formation of additional buds near the ground, so that finally it becomes a tuft consisting of several leaf-pairs. These clumps seem however to develop rather sparingly, the cespitose habit being noticeably less than in the Punctillaries, e.g. *P. nobilis,* where it is soon evident even in seedling plants.

In the autumn, usually about September (in this region) flower buds begin to form at the junction of mature leaves, either before or simultaneously with the new leaf-buds, in the latter case crowding them to one side. One or several may appear in succession. We have observed as many as five flowers on a single plant. When many are borne the flowering period will be extended to several months, as a flower does not develop until the previous one has withered. In the illustration of the flowering plant the withered remains of the petals and the maturing fruit will be noted just in front and to the left of the open flower.

The flower expands in the afternoon, commencing to open about 4:30 p.m. and closing at dusk. As in most Mesembs the opening depends also on weather conditions. But unlike some species, *P. bolusii* will not open even in full sun unless the temperature is sufficiently high. According to N. E. Brown they will open even in the absence of sunshine, provided the temperature be over 70° F.

The petals are bright yellow within, with a narrow white zone at the base, the outside being lighter with a distinct pinkish tinge, but generally without the scarlet tips of *Punctillaria nobilis* and others. The petals are slightly incurved at the tip; even at fullest opening they are seldom or never spread completely much less laxly recurved as in *Punctillaria.* This is usually a physical impossibility, as the proximity of the leaves prevents full expansion. N. E. Brown compares their scent to that of fresh cocoanut. The stamens are deep yellow, erect, but not collected into a distinct cone.

Each flower expands on several successive afternoons, some lasting a week or more, depending on weather conditions, and, probably, also on whether pollenization has taken place. They continue to grow in size during the period of anthesis, gaining as much as an inch in length from the time they first open.

Flowering plant of *Pleiospilos simulans* (Marl.) N. E.Br.

P. bolusii is native on stony hills in the eastern Karroo south of the Zwart Ruggensbergen, in the Graaff Reinet and Aberdeen Divisions, Cape Province. The type locality is 40 miles southwest of the town of Graaf Reinet.

In much the same neighborhood is found the

[2]See JOURNAL, Vol. II, No. 2, p. 274.

other of the two best-known species of the genus, *P. simulans* (Marl.) N. E. Br., discovered by N. E. Pillans and described by Dr. Marloth in 1907. This is practically identical in all points except the shape of the leaf, the underside of which is here not produced beyond the tip in a prominent chin-like bulge, while the upper is lanceolate in plan rather than obovate; the tip is more acute and the whole leaf strongly recurved-spreading in maturity, with a more pronounced keel. If *P. bolusii* may be said to have the prow of a Dutch fishing boat, *P. simulans* has more nearly that of a clipper. As seedlings the two species are practically indistinguishable, later on the difference becomes apparent and seems remarkably constant when large numbers of each can be compared.

Several more species have recently been described, such as *P. pedunculatus* L. Bol., where the flower has a distinct stem, and *P. nelii* Schw., a miniature and more compact edition of *P. bolusii*. We hope to give a complete list of species later.

In cultivation *P. bolusii* and *P. simulans* are distinctly more successful than many other of the stone-shaped Mesembs, such as the species of *Argyroderma, Lithops* and *Titanopsis*. The former has been grown for two years in the open ground here in San Rafael) rainfall 37", average winter low night temperature about 35°, 5° or more of frost) without great damage. It is very easy to grow from seed, which germinates readily and is easily obtainable either from South Africa or Europe. The seed is much larger and therefore more easily handled than in Lithops et al.

A good well-drained soil, with sand and plenty of gritty matter, as used for the general run of succulents, will suit it admirably. Occasionally a plant will be lost by rotting of the leaves from excess moisture, so that it is well to cover the surface with crushed rock or similar material. But the plants never seem to expire suddenly without apparent cause as sometimes happens to our sorrow with the more temperamental members of the tribe.

Both species can be warmly recommended to any amateur.

CACTUS CAESIUS (Wendl.) Britton and Rose

(Turk's Cap or Melon Cactus)

By W. E. BROADWAY
Trinidad, W. B. I.

In the photograph can be seen eight ripe fruits sunk into the cephalium with the withered flowers attached to them, and a portion of a ninth fruit which has been bitten off by some insect or animal, showing several of the exposed seeds. In size the fruit averages 1¼ inches long, 1¾ inches in circumference at the top part, colored bright, shining red at the thickened apex, shading off to maroon down to the narrow, pointed base. Seeds numerous, placed irregularly throughout the juicy, white pulpy substance of the fruit. When the fruit (which is not unlike a radish) is lifted out of the cushion (cephalium) an opening is left owing to the spaces not closing up again. Maximum girth of the body of the pale green plant is 21¾ inches, eleven-angled, areoles supporting nine whitish strong spines of various lengths. Its height is 7¾ inches and weight 7½ pounds. If one looks closely at the photograph two little plants of the same species are discernible, one in the middle at the front, the other to the left.

Photo by A. T. Carr

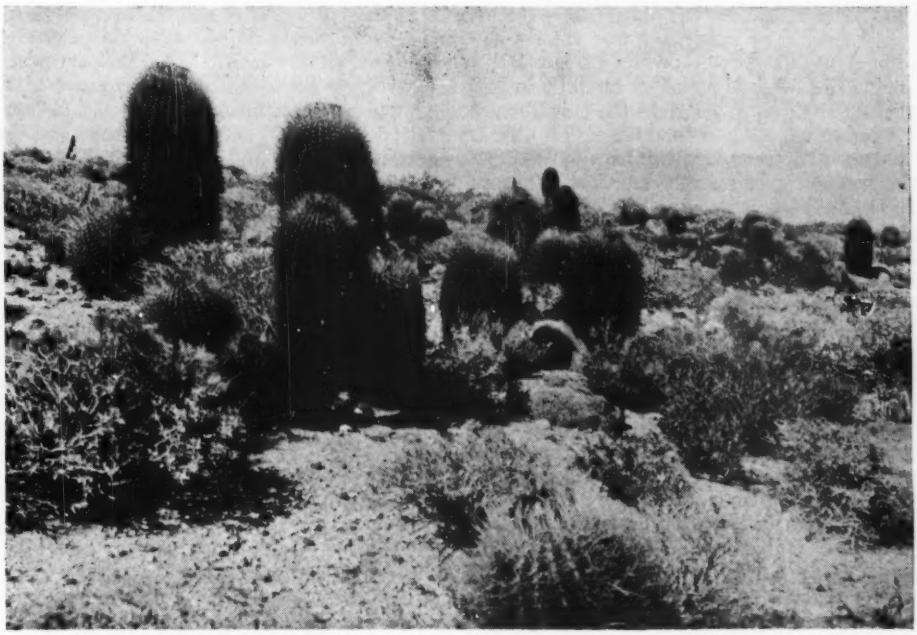

Photo and Copyright by Lena Scott Harris — Largest plant 5 feet high

Viznagas of Morongo Valley, California
(Ferocactus acanthodes)

THE CACTACEAN'S PRIMER

Viznaga or Barrel Cactus

By JACOLYN MANNING, M.D.

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A Golden Barrel Cactus standing three feet high and weighing three hundred pounds was the high point of interest at the Pasadena Flower Show in the fall of 1929. The large marquee tent was a vast garden filled with gay exotics ranging from costly orchids to "dish-rag" gourds, but it was at a desert patio guarded by the golden *Ferocactus* that men, women, and children lingered in delight.

Among the numerous Barrel Cacti of the Southwest and Mexico there are several which glitter in the desert sunshine as golden as the sun himself. *Echinocactus grusonii,* the "wundervolle Schaupflanzen" (showplant) of the German Kakteen catalogue, is, in youth, the perfect blonde that gentlemen are said to prefer; it decorates the garden like a large and costly casket of gold. *Ferocactus rostii,* which may blush a little in youth, is closely set with interlocking spine clusters, which almost conceal the body of the plant and blanch to golden in maturity. This rare Viznaga was named for Ernest Rost of Alhambra. *Ferocactus diguetii,* found on the Islands of the Gulf of California, and typically on Catalina, is a tall and stately Golden Viznaga, which may reach a height of twelve feet.

The Golden Barrel of the flower show was however still more rare, being a clear yellow sport of the usually rose colored *Ferocactus acanthodes.* It was discovered in a group of its brothers, pressed so closely by a mauve barrel of the same size that the ranch owner said they looked like twins.

Frederick Staines, whose name was given to *F. stainesii,* shipped a Barrel Cactus to Kew Gardens in 1845, and thus tells his experience:

"My monstrous friend from his stupendous

size—cannot travel on carriage springs which I have despatched to the mountain where he grows, with 20 men. It grows among huge stones in the deepest ravines of our loftiest mountains. I shall pack him carefully in mats before applying to his roots the crowbars destinued to wrench him from his resting place of unknown centuries. He will have to travel 300 leagues before he reaches Vera Cruz. When unpacked at Kew it was uninjured; weighed 713 pounds; its circumference was 8 feet 7 inches. There were 44 ribs, on each rib 50 bundles of spines with four spines to each bundle; thus there were 8,800 spines."

Staines "monstrous friend" deliquesced shortly after its journey to Kew, and the Golden Barrel of the flower show did not survive the winter in spite of the most careful attention. It is a mistake to remove mature specimens of these cacti from their native rocks; the content of the Barrel is so pulpy it has little more structural integrity than a stock citron, and its own great weight, in handling, destroys its textural resistance. It is however the semi-liquid content of the Viznaga which gives it a star part in every drama of the American Desert.

Ferocacti are well known in the Southwest and Mexico because of their abundance and large size and the many uses made of them. The Mexicans call them Viznaga, (pronounced Beessnah-gah). The Mexican name is supposed to be derived from the native language, huitzli, spine, and nahuac, around, thus, literally "spines all around." The Mexicans also used the name Teocomitl, "divine vessel" for these cacti. The Viznaga was sacred to the god Mixcoatl. It is recorded by ancient Spanish historians that the ferocious spines were used in blood sacrifice in the "bloody and gloomy" native religion; that they were consecrated, and kept in a sacred place in temples erected to the deity.

The tradition seems to be well founded, and with our knowledge of the sun-worshipping Aztecs, Incas, and Mayas, it is not difficult to imagine the Barrels of a golden color were most sought for and most sacred. They, alone, in contour and glittering radiance most resembled the great, the greatest deity. It is not difficult to apprehend that in other days the great golden chalice would have been sought and consecrated to the uses of the astronomer-physician-priest serving in the nearest temple of the god Mixcoatl.

The Barrel Cacti of the Mohave and Colorado deserts have been put to much more practical uses by red man and white. One of our sailor boys, who homesteaded on the desert when his term of service was ended, told me they made fine steam-cookers, and that he always "boiled eggs in a Barrel Cactus." Cut off the top of the Barrel right where it stands, he directed, scoop out the pulp, put in a little water, and some "right hot" stones, and you can cook eggs, "or anything."

It is in the tradition that Indian squaws use Barrel Cacti commonly as cooking pots, and the spines for knitting needles. The Papago Indians of Arizona cut the pulp in strips, and preserve it as we preserve citron, by boiling it in syrup, but the syrup is first obtained by boiling down the sweet and rosy juice of the fruit of the giant sahuaro. Commercial cactus candy is also made from this pulp.

Modified to some extent by the last rains the pulp of the Barrel Cacti contain about 85% water. This knowledge is widely diffused. The desert writer,—who, I am informed in one instance had traversed no more arid region than the steps of the capitol at Albany, N. Y.—gravely advises the man dying of thirst in the desert to cut the top from the nearest Barrel Cactus, pound up the pulp, drink the accumulating liquid, and continue his trek.

There is a better way. It was told me by Mr. H. C. R. of Pasadena.

Many years ago Mr. R. drove 3,700 sheep from Old Mexico to Kansas. He engaged a number of peon sheepherders to assist the drive. At the close of one march they did not find the expected waterhole, and Mr. R. was suffering from thirst. One of the Indian herders thrust a knife into the stem of a Viznaga near its base. He replaced the knife blade with a sliver of wood along which water dripped by force of gravity. In a few minutes Mr. R.'s drinking cup was filled with water. That cup of cactus water tasted better to Mr. R. than any champagne he ever drank! His elation was justified. He had successfully swum his 3,700 head of sheep across the Rio Grande and camped on U. S. territory just six hours before the new McKinley tariff of one dollar per head on imported sheep went into effect!

And the Viznaga was not injured. It is said the same plant will yield one generous drink daily with no harm to its existence if treated in this manner.

Ferocious as is the defense armor of the Viznaga, like Achilles they are all vulnerable at the heel. One not infrequently finds a young Barrel on the desert, hollow as a blown egg. This unfortunate plant has furnished a long

season's menu for the family of some ground-dweller, who entered via the rootstalk, and cunningly rifled the armored sugarchest. The hollow skeleton may be used as an unusual and luminous lantern.

The defense armor of *Ferocacti* accomplish their destruction when fire is abroad. The complicated system of interlocking spines will flash into a huge torch with the application of a lighted match. I have been told with all seriousness by desert wayfarers that during a long heated term the sugary contents of the Barrel develop a gas with which the plant is impregnated, and lighting the spines will induce a fierce conflagration which endures but a few brief moments when the huge plant explodes and is torn to shreds. An executive of the Death Valley Clay Products Co., related the burning of a large Barrel. He was one of a party hiking up the Panamints. It was very cold at the altitude they reached, and they fired a big cactus for warmth. Much to their surprise the cactus was still burning after their return and the coming of darkness. It could be seen thousands of feet up on the mountain, incandescent and "looking like a new planet." Perhaps it was a Viznaga on fire at night, that gave them that other charming Spanish name of "caballuna" or the "perfect moon."

Texas cowpunchers used the Barrel Cacti of the high steppes (*Ferocactus wislizeni,* the Texas fishhook cactus) for bonfires so frequently the state ordered a penalty of fifty dollars for each conflagration. I knew of a fine specimen being taken from an Altadena garden and burned on the street by hoodlums; so guard your beautiful plants and smile at that pharisaical charge that desert plants are destroyed by cactus *lovers.*

It is a fairly comic pastime as well as an interesting and instructive one to grow Viznagas of the desert from seed. With fresh seed in warm weather I have had them germinate (under glass) in five days from sowing. In six weeks the tiny jade green or rose colored beads of tissue put out their defense armor of absurd little spears. Young plants from one to six inches in diameter are highly colored and most attractive for the window garden. These plants if kept in a healthy condition are little troubled by other insects than ants. Mealy bug is their worst enemy. If it appears remove at once with an applicator dipped in mucilage.

This portly vegetable, as Smeaton Chase calls the Viznaga, blooms in spring and early summer. Flowers appear as a wreath crowning its head. The flowers are delicate as silk crepe, upright and stemless, having their stance on the cylinder top, embedded in spines. Their color ranges from straw color, through orange, brown, red to rose, purple, scarlet and crimson. Fertilized blooms develop a plump green ovary brocaded with bronze tufts, and stuffed, with shining seed—brown or black—hundreds of them.

Ten Best Known Viznagas

The following technical description of ten of the most familiar Viznagas, is taken largely from Paul Standley's monograph which is based on Britton and Rose "Cactaceae"; with comment by the present writer.

Ferocactus. Globular to cylindric, often large cacti; ribs thick and prominent; spines well developed, either straight or hooked; areoles usually large, bearing flowers only when young, and then only just above the spine clusters, more or less felted when young; flowers usually large, broadly funnel shaped to campanulate, usually with a very short tube; stamens numerous, borne on the throat, short; ovary and flower tube very scaly; fruit oblong, usually thickwalled and dry, dehiscing by a large basal pore; seeds black or brown, pitted.

(1) Ferocactus covillei. Southern Arizona, and Sonora, Mexico, type near Altar. Plant simple, globular to short cylindric, often 1.5 meters high; ribs 13 to 32, when young more or less tubercled, when old hardly undulate; areoles densely brown-felted when young, spine bearing; flowering areoles elongate, divided in three, the lower third bearing spines, the central part spine-scent bands, and upper third the flowers; spines red to white; radial spines spreading, 5 to 8; central spine always solitary, tip bent or strongly hooked, 3 to 8 cm. long; upper areoles of old plants bearing 5 to 7 glands becoming spinescent; flowers cup shaped, yellow red tipped, golden stamens; fruit oblong, scaled; seeds black.

F. covillei, which was formerly known as *Echinocactus emoryi,* is a plant of startling beauty. It is not common. It is beauty alone which has brought to it fame and love. The compact stem is colored on the lower third with a rich golden-tan which merges above into as rich a medium leaf-green; the ribs on their upper surface are painted longitudinally with madder. The effect of the body of the plant is that of a richly colored majolica vase. This perfect sphere is airily enclosed with a swirling outer sphere of rose colored spines curved to maintain the same symmetrical distance at all points from the treasured object whose defense called them into existence and curved their rosy prongs in the line of beauty. So the vase with its

high glaze of color is forever preserved from damage by an open but impenetrable rose-colored grill.

(2) FEROCACTUS ACANTHODES. Nevada, Southern California and Lower California. Globular to cylindric with age; to three meters high, very spiny; ribs to 27, acute; areoles densely brown-felted when young; often nearly contiguous; spines white, to pink, to bright red; radial spines weak, spreading; central spines slender, annulate, curved but not hooked at tip, to 12 cm. long; flowers yellow to orange; fruit oblong, dry, dehiscing by a basal pore; seeds black, pitted.

(3) FEROCACTUS STAINESII. San Luis Potosi. Simple or proliferous; globular up to 1.5 meters high; ribs 13 to 30 compressed, more or less undulate; areoles distant, circular; radial spines reduced to long white hairs; central spines several, at first purplish, becoming pale yellow in age; flowers yellow.

(4) FEROCACTUS WISLIZENII. Texas to Arizona, type from Dona Ana, New Mexico. Globular, becoming cylindric when old; to 2 meters high; simple, when injured giving off several heads; ribs to 25; areoles elliptic, brown-felted; spines variable; radials absent or threadlike; centrals white to red, annular, strongly flattened and hooked; flowers yellow to red; fruit yellow; seeds dull bleak.

(5) FEROCACTUS DIGUETII. Type from Santa Catalina Island. Plants very stout, from 1 to 4 meters high; 60 to 80 cm. in diameter or more; ribs to 39, rather thin; areoles approximate, or on old plants coalescent; spines 6 to 8, yellow, 3 to 4 cm. long, slightly curved and a little spreading; flowers numerous, red with yellow margins; tube of flower below stamens very short; fruit scaly.

(6) FEROCACTUS VIRIDESCENS. Souther California, the type from San Diego. At first globose or somewhat depressed, in age becoming cylindric; to 45 cm. high, to 35 cm. in diameter; ribs 13 to 21, obtuse, undulate; areoles narrow, spine and flower bearing, with several reddish glands; spines bright red turning to horn color; radial spines many, lower central spine (noticeably) stout, and flattened; flowers yellowish green; fruit long reddish, with a pleasant acid taste; seeds long, pitted. *F. viridescens* grows freely in delightful family groups along the cliffs at La Jolla; the group consisting of one or two 5-6 inch elders, quite surrounded by a dozen or more babies of from one to one and a half inch size, are deceptively hidden in coarse grass; when the grass is drawn away the deep glossy-green mounds with their embroidery of red spines, and their clustering children, are revealed. In marked contrast to the rich metallic color of *F. viridescens,* mats of gray-green *Stylophyllums* carpet much of the ground, and both thrive in the salt sea air.

(7) FEROCACTUS HAMATACANTHUS. *Viznaga de limilla,* Texas, New Mexico, Mexico. Solitary, globular to oblong; to 60 cm. high; ribs strongly tubercled; areoles large; radial spines about 12; central spines 4, to 15 cm. long, and one hooked at apex; flowers yellow; fruit oblong, fleshy, edible. The name *Viznaga de limilla* by which it is known in Nuevo Leon arose from the use of its fruit as a substitute for lemons or limes in native cooking.

(8) ECHINOCACTUS GRUSONII. San Luis Potosi and Hidalgo, Mexico. Plants (usually) single, to 4 feet high, and 2 feet or more in diameter; body light green, concealed by golden yellow spines, which are highly polished and give whole plant a glistening golden appearance; the cadmium yellow flowers crown upper surface of sphere; fruit oblong and thin walled and almost concealed in a mass of light yellowish brown wool; seeds small, kidney shaped, dark brown. *E. grusonii* have been grown from seed in great numbers by William Hertrich, director of the Huntington Botanic Gardens, and give a touch of barbaric splendor throughout the cactus gardens. They look as if California gold, weary of underground existence, had budded and risen through the mould in gigantic golden puffballs.

(9) ECHINOCACTUS POLYCEPHALUS. Utah and Arizona; type from Mojave River, California. Solitary when young, in age forming large clumps of 20 to 30 heads, globular to short cylindric; ribs stout, undulate, hidden under dense spine armament; spines reddish, flattened; flowers yellow, hidden under mass of long wool; fruit densely woolly, dehiscing by a basal pore; seeds angled, dull black.

(10) ECHINOCACTUS HORIZONTHALONIUS. Western Texas to Arizona. Mexico. *Viznaga meloncilla* (little melon), *Viznaga de dulce,* Durango. This prim and handsome cactus, whose turgid body is spaced out in the same manner as the old fashioned "tomato pincushion," is known in our family as the "Texas tomato." The sage green body has a glaucous finish, and is protected by a system of rosy spines in a closer network than *F. covillei.* The flowers are pale rose color and large, and have a great time pushing through the nest of white cottony substance in which they mature. We have never yet had seeds mature, but the fruit is said to be red, and we are told there are people so inconsiderate of beauty, that they cut up these cacti to make what must be a very insipid candy.

Photo by Count Knuth.

Neolloydia knuthiana Boed., one of the many new species recently discovered. It comes from San Luis Potosí, but has only been found in very small quantities. Even very small plants produce numerous flowers. This species is related to *Neolloydia Beguinii,* but differs in having but one central spine. The genus *Neolloydia* is extremely interesting, and I have made a special study of it. During the last years quite a lot of new species properly belonging to this genus have been described, and another time I shall write an illustrated article about the old and new species. COUNT KNUTH.

EDITOR'S NOTE: Count Knuth is publishing his first book on Cacti, which will be reviewed as soon as it is off the press. His book will contain a great many photographs which will make the book very valuable. We are fortunate to have such a valuable contributor of photographs and now that his book is completed he has promised to send us articles as well.

CACTI vs. CACTUSES

Dear Grampa!

Good for you! Even I, accused as I am said to be (by my more candid friends) of oozing Greek or Abyssinian or what-not by every pore in a vain attempt to sound erudite, have on occasion broken a modest lance for *cactuses.* In the right place, well understood; when we talk, as it were, in our shirt-sleeves (id est, discoursing colloquially). As, per exemplum: "Say feller, whadja gonna do with all them cactuses?" I'd be using it right along if it wasn't for the confounded sibilance of the word; I hate to sound like a snake in the grass.

Not that *cacti* (pronounced ad lib.) isn't a horrid word also, euphoniously speaking. But what are we going to do about it? Sit down and cry might help some, or else offer a prize for the best name.

Yours,

DIOSCORIDES, JR.

MESEMBS.

(Continued from Last Issue)

By N. E. BROWN

Glottiphyllum is another genus that appears to be little known in America. The name means "tongue-leaf," from the leaves of most species of this genus being more or less tongue-shaped, and thick, soft and very fleshy. As a genus, it is perhaps somewhat monotonous, because the flowers of all the species are very similar, being large and yellow. Yet the flowers of the various species differ; for while in some species they are pedicellate (stalked), in others they are sessile. Some will expand only during bright sunshine, others will expand irrespectively in dull cloudy weather or in sunshine. Some are pleasantly fragrant, others are scentless. It is really a fine and interesting genus, and a collection of a dozen or twenty species would be attractive to most cultivators, but they are very difficult to acquire correctly named! In Europe the species of *Glottiphyllum* are not much in favor with cultivators, because if a collector buys or otherwise obtains a plant under a name that is not in his collection, it frequently happens that it proves to be the same as one he has under another (or perhaps more than one) name. *G. longum, G. latum* and one or two others, and hybrids derived from them are the kinds most frequently met with while *G. linguiforme* (to which Berger in *"Mesembrianthemen und Portulacaceen"* has referred a number of species as mere varieties of it), is an extremely rare and very little known species, quite unlike any that are supposed to be varieties of it. So that while plants under the name of *G. linguiforme* can be easily obtained, they nearly always prove to be forms of *G. longum* or hybrids, and the true *G. linguiforme* will be obtained by very very few.

The reason for this is not difficult to understand, for, in my experience, these plants do not usually become fertilized with their own pollen, but hybridize freely. So that if only one plant of a species is in a collection, it can only be increased by cuttings, and as these plants do not branch very freely, that mode of propagation is very slow. And if seedlings are raised from the plant, they are almost certain to be hybrids; these may hybridize again, and in a few years of progeny is not at all the same as the original plant, which may in the meantime have died. From such observations as I have been able to make, it would appear that many of these plants have been distributed by seeds from European gardens, the result being that by frequent hybridization the forms have been levelled down to one general type, and that type is found under several names.

West Photo

Glottiphyllum neilii, N. E. Br. in the collection of Mrs. Max M. Cohn, Los Gatos.

Therefore I advise those in America who wish to obtain a few distinct species of this group, not to try to raise them from seeds procured from Europe, but to try to obtain native grown wild plants from a reliable source, as the names given to some of these plants in So. Africa are scarcely more reliable than those in Europe. *G. apiculatum, G. arrectum, G. longum, G. muirii, G. neilii, G. propinquum, G. regium* and *G. semicylindricum* are all perfectly distinct types and well worth cultivating.

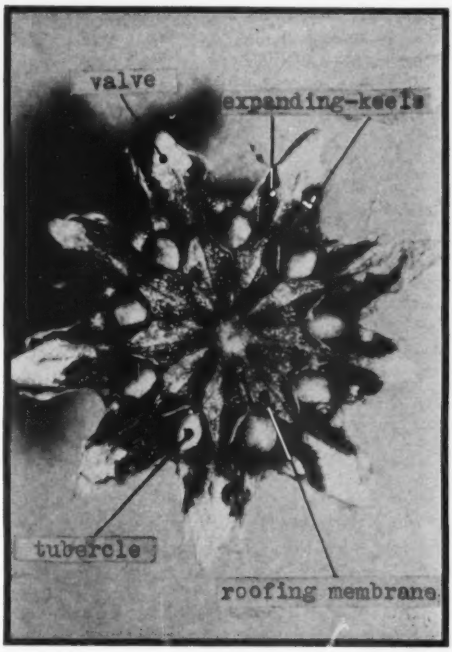
I have mentioned the fruit of this group of plants as affording an important means of distinguishing the genera, and the fruit of *Glottiphyllum* illustrates in the best possible manner the remarkable and highly complicated structure found in the fruit of Mesembs. Externally the ripe seed vessel of a *Glottiphyllum* has little to recommend itself to the notice or attract the attention of anyone. But place a perfectly ripe fruit of any species in a cup of water and watch the result, which is the same as when a shower of rain falls upon it. In a few minutes the tightly closed valves begin to separate and gradually expand, so that in a short time the unattractive fruit becomes converted into quite a pretty

flower-like or star-like object, often of an ochreous ground color with dark brown expanding-keels, and of complicated structure, which I recommend to the notice of those who look at it,

West Photo
Fruit of *Glottiphyllum* x *longum* closed state x1½.

for it is well worthy of examination. Note the two keels extending up the inner face of each valve and ending in membranous or slender points; these are the expanding-keels or organs that rapidly absorb water when rain falls, swell up and force the valves open. In the central part the cells containing the seeds are placed alternately with the valves and are roofed over with rather stiff membranes, and the entrance to each cell is nearly closed by a large pallid tubercle, which would seem to be placed where it would prevent the seeds from escaping from the cells, but it has been discovered by Professor Garside that it is really an aid to the dispersal of the seeds. As the moisture evaporates from the expanded fruit the valves close together tightly, to await the advent of another shower of rain.

I have found the seedling stages of *G. neilii* (and some other species) very perplexing and interesting to watch. The seeds were taken from newly imported wild plants, so were not the result of hybridization. The first leaves developed are entirely unlike those of the parent and more like those of *G. apiculatum,* and it is only during the second year that the adult type of leaf makes its appearance, so that seedlings up to 18 months



West Photo
Fruit of *Glottiphyllum* x *longum* expanded state x3.

old are often not very much like the adult plant in foliage. When not supplied with too much water and fully exposed to a hot sun, *G. neilii* is one of the most distant species in the genus, and becomes very prettily tinted with pink and purplish on a peculiar glaucous-green ground color.

We sit back and allow ourselves to be flattered.

The attention of readers is called to a bit of foreign comment by W. E. Broadway, Woodbrook, Port of Spain, Trinidad, B. W. I., who has become a subscriber and contributor. Mr. Broadway went from England to Trinidad over forty years ago to fill a government position in the Trinidad Botanical Service and has been there continuously since. His contact with our organization has come through his longtime friend, Dr. N. L. Britton, and through Dr. Houghton. M. N. L.

THE CACTUS PATCH

By MARY NORWOOD LAWRENCE

Otto H. Roller, who sells cacti and succulents at New Milford, N. J., a state with less native cactus and more interest in its cultivation and dissemination than most other states, won second prize for his Cactus and Succulent Garden at the recent flower show at Newark in the same state. Mr. Roller, having the vision, joined the Society among the first and has been a helpful member to us of the Editorial Staff.

The photographs of his exhibit which he sends on would seem to do credit to our own cactus shows in the country to which they are native.

The while there is a whisper of another cactus society in another state buzzing around, we get tidings and a call for help from Belgium. It seems they are forming a Cactus and Succulent Society with this mouthful of a name, Cercle des Cacteophile Belges, der Belgische Kakteenliefhebbers. They wish to publish a journal, patterned after ours or maybe that of Germany or Holland. At any rate, it behooves us to be a model and are mailing some of our choicest samples to the Secretary, G. Van de Weghe, at Ghent. Congratulations and good wishes.

We have a helpful desire to help others while helping ourselves. Christmas coming on apace, the suggestion of a subscription to the JOURNAL may not come amiss. We all have acquaintances whose interest in our Society would be permanently clinched by some such thoughtful attention. This appeal not being Community Chesty and carrying no red tape save name and address sent to our Secretary, Boyd L. Sloane, should meet with instant response.

There is a fine old gentleman out Whittier way who used to have cactus for sale in a little shop on Main Street, a quarter century or more ago where the writer came to California and was laughed at for a tenderfoot because she "took up" with cactus culture.* His name is Edlefson L. P. Edlefson. He sold her her first cactus plant. Years back this eighty-year-old culturist gave up his cactusing and retired to his estate at Montebello. But the years have not dulled his interest in every growing thing. Retirement, idleness, was not for him, and once again he girt his fingers against the pricks of the evil-looking genera; built up his lath houses and hot beds and started out again as a cactus grower. The Succulent craze came on apace and finds the old dear keeping step with us all.

*This is the joke on the Assistant Editor. In those days 'twas California gems or cactus. Gems were too costly. Cactus could be found in erey Arroyo! Alas for her pocket book! How much bulkier today, had she chosen gems!

Dr. Manning has drawn us a little outline of Charles Gibbs Adams' talk at the November meeting of the Society. Mr. Adams is a landscape architect and speaks with authority on Rock Gardens—concise, informative and witty, he says in California there are terrible handicaps to overcome:

"Our piecrust and biscuit Spanish American bungalows,—our habit of cutting down 600 year old live oaks to burn in fireplaces, our destruction of age-old pepper trees and eucalyptus, our use of synthetic rock—terrible!

"California has great stores of beautiful and abundant rocks, yet the manufacture of bogus stones and logs continues. Before Mr. Wm. Hertrich took charge of the Huntington Estate, the Cactus Gardens were located as a border to the lake. When one plans a planting of brilliant Aloes they are spaced out to leave room for the 'kittens' that bud freely from the parent stalk; on my first tour of inspection I found the resident gardener had filled these spaces with pansies, stock and snapdragon!

"My first rock garden six years ago was a great novelty and brought many visitors. Now, partly owing to the good work done by this Society in encouraging the planting of cactus and other succulent gardens, they are not a rarity.

"Don't have a nice German wedding cake of a rock garden! don't have it high; see that it is kept low. Don't use variegated plants and shrubs; golden privet is disease glorified!

"The first prime requisite of a rock garden is drainage. A good generous layer of crushed rock as base with at least a foot of good soil, with humus, leafmold or peat if not using cactus. For the wall use rocks with rough surfaces of brown, red, etc. I have seen gardeners scrape off the lichen, brown, gray or orange, that has taken 50 or 60 years to grow on the rocks. Walls of gray cobbles are very poor art and hard to look it."

EUPHORBIA CLAVA

By G. A. FRICK

Euphorbia clava Jacq. is a member of the TREISIA group of the genus Euphorbia, which section has 12 species, all of which can be readily identified by the naked stem with the glabrous green leaves which are present only on the upper part of the stem and branches. All species of this group branch freely, (*E. bupleurifolia* not excluded). Branches removed in the spring of the year root readily, and all species of this group can stand far more abuse than most Euphorbias without injury to the plant. They do exceptionally well growing out doors in a partially shaded position, or under iaths in Southern California all year round. A plant of *E. clava* in the collection of a somewhat neglectful dealer, was observed by me with pity for over two years, to learn just how much abuse it could stand and still survive. In a four-inch pot which cramped the roots, and standing on the rail of a fence exposed to the hot burning sun of the summer without a drop of water for months; subjected to the frosts and harsh winds of the winter the plant endured for over two years before it finally died. Yet the owner would not sell the plant or give it the slightest attention.

Importations of *E. clava* always come through 100% perfect. A shipment received this summer by the writer arrived showing new growth included one badly mutilated; this is an exception with Euphorbia importations, the usual average is about 50% dead. Mr. Orpet's *E. clava* plants set seed the first year and supplied several cuttings. *Euphorbia clava* is native to South Africa where it seems to have a wide distribution, occurring near the Zwartkops River and Port Elizabeth, also has been found near Uitenhage and Albany, and is known to have been in cultivation in Grahamstown for many years. As early as the year 1700, plants of *E. clava* were sent to the Amsterdam Botanic Gardens in Holland, and Jacquin who first described this plant had this species in cultivation 100 years after this date.

Noted botanists of the past it seems have caused some confusion with this plant, and records show it has two synonyms, a slight variation perhaps due to having grown under different climatic conditions seems to have been sufficient grounds for the creation of a new species, and have brought forth such names as *E. radiata, E. coronata* and *E. clavata. E. radiata* was later found to be an altogether different species and was described and renamed *E. restituta* by N. E. Brown. Thunberg had already used the name *E. radiata* for a totally different plant of the genus *Euphorbia.* Boissier had also mistakenly described another plant for the species now known as *E. radiata.* It therefore appears to have been the advisable thing, in the face of so much confusion, to give it a new name, which was rightly done by Mr. Brown.

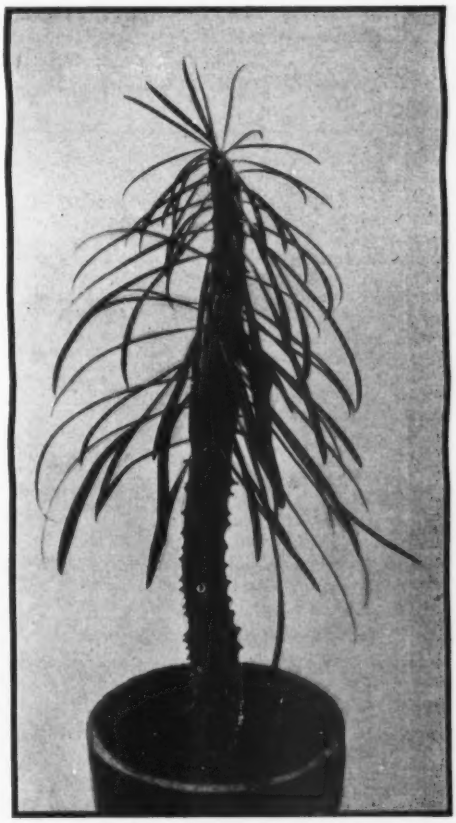


Photo by Haselton

A plant in the Thunberg Herbarium which had perhaps assumed a somewhat different appearance, was named by Mr. Thunberg *E. coronata,* but later a flower of the type specimen of *E. coronata* dissected by N. E. Brown was found

to be identical in every way with *E. clava.* Consequently the name *coronata* could not be maintained.

Near Port Elizabeth grows a *E. pubiglans,* N. E. Brown, that is very closely allied to *E. clava.* Living plants of *E. pubiglans* sent to Kew in 1912 by Mr. I. L. Drege of Port Elizabeth were described by N. E. Brown as being very similar to *E. clava,* but the manner in which the base of the upward tapering stem is abruptly rounded into the root, its very much smaller, very crowded tubercles, shorter peduncles, pubescent glands and straight and much shorter styles, distinguish it from *E. clava.*

DESCRIPTION: Stem erect, simple and clavate or columnar when young, afterwards branching, one to four feet high, 1¼ to 2½ inches thick with a long tapering basal part; branches also grow erect, parallel with main stem, and are about one inch thick, cylindric, and covered with hexagonal conical tubercles ½ to ⅔ inch in diameter; prominent, the older part of the main stem is marked by impressed lines into elongated rhomboid, scarcely prominent areas produced at their apex into a slight tubercle, glabrous, green, but not glaucous; leaves only present on the upper part of the stem and branches, alternate, sessile, deciduous, 2½ to 5½ inches long by 1½ to 3 in. broad, linear-lanceolate, more or less tapering toward the base, slightly folded lengthwise, glabrous, green; peduncles solitary 3 to 7 inches long, with 3 to 6 alternate bracts scattered along them and a whorl of 3 forming a cup around the solitary involucre at the apex, these wither and persist several seasons but form no spines; bracts green, involucre sessile within the bracts, about ⅓ inch in diameter, also green, with 5 dark green glands and 5 minutely toothed or ciliate lobes; seeds 2 lin long, ellipsoid, shortly pointed at one end, color dark brown.

EXCHANGES

Conducted by MRS. W. M. KETTERINGHAM
610 West 65th Street, Los Angeles

The Exchange Department is conducted for the benefit of all subscribers to the Journal, and in order to expedite the handling of your requests for exchanges please accompany the list of plants you have for exchange with a stamped self addressed envelope. Through this Department you will then be put in touch with some member or members of the Society who have the plants that you desire.

Exchanges Offered

Pachycereus pringlei, about 9″ high, rooted.

Harrisia fragrans, rooted.

Myrtillocactus cochal, cutting.
" eichlamii, cutting.

Trichocereus bridgesii, cutting, 12″ by 2″.

Cephalocereus Royenii, cutting, 29″ by 3″.
" senilis, better than 2″.

Pilocereus strausii.

Cereus hexagonis, cuttings, 5 ribbed, brown spined, fine.
" alacriportanus, cuttings, about 10″ by 4″.
" hildmannianus, cutting, about 18″ by 4″.
" tetragonus, cutting, black spined.
" peruvianus monstrosus, rooted, 18″ by 4″.
" rathbunia alamoensis, cutting, 8″ by 1½″, rare.
" eruca.
" beneckei.
" childsii.
" hystrix.

Pelecyphora pectinata, rooted, small.

Mammillaria bocasana, rooted, very small.
" hahniana, (not over size of 25c piece) for grafting.
" hidalgensis.
" senilis.
" geminispina.

Euphorbia globosa, rooted, small.
" ammak.
" canariensis.
" clava.

Opuntia vestita.
" cereiformis.
" papyracantha.
" bernardina, cristate, rooted.
" cylindrica, cristate, rooted.

Echinopsis multiplex, grafted.

Echinocereus knippelianus, grafted, small.
" stramineus, cristate, grafted.
" chloranthus, cristate, grafted.
" pectinatus, cristate, grafted.

Melocactus intortus with cephalium, 12″ high.

Also several each of Haworthia margaritifera, H. turgida, H. cymbiformis, H. tessellata, mesembryanthemum vitatum, M. tigrinum, Aloe variegata, and Gasteria lingua.

Echinocactus schmiedickeanus

(See page 361)

Echinocactus schmiedickeanus was recently described in the JOURNAL and the statement made that it is probably not to be found in cultivation in the U. S. A. Mrs. Ysabel Wright of Santa Barbara had a plant in bloom which was photographed by Mr. Wright Oct. 24, 1930. This plant had a small, pale pink flower with bright pink stripes in the petals. It was about 1 inch in diameter and nestled close to the plant.

The labels are ¼ in. x 2½ in. which gives a scale by which photographs of plants and flowers in the Wright garden can be measured.

EDITOR'S NOTE: Mrs. Wright has prepared an excellent article on seedlings which appears in the next issue.

THE CACTOPHILE'S LAMENT

By NED LAWRENCE

What Are We Coming to?

When our society was named, I was in favor of christening it simply "Cactus Club." But other minds prevailed, and the cumbrous but comprehensive title of "Cactus and Succulent Society of America" was conferred upon the infant.

Look at the Darned Thing Now

Cactus is minimized and Succulents are magnified so that the name might well be amended to the "Succulent Society of Madagascar, Ceylon, Natal and Palestine (and cactus of america)."

Month after month I pick up the JOURNAL and find articles about Gasteria and Gastrolea, Lithops and Fenestraria, Lapidaria and Rimaria, but where are the Cacti of yesteryear?

I visit the gardens of other club members and find them given over chiefly to the exploitation, cultivation, propagation and importation of Euphorbias from Natal or Bryophyllums from Madagascar. Cactus, if any, is choked in a background of weeds. Kalanchoe and Kitchingia vie for reserved seats in the front row.

Here is my old friend, the Colonel, who years ago planted spiny barrels, thorny columns, and bristly slabs of real, honest-to-goodness Cactus among stumps, and rocks on natural acclivities, thereby achieving a paradox of beauty out of ugliness and opening a new vista in the possibilities of artistic landscape gardening. Today he is pot-putting in his hothouse a lot of dainty little seedling succulents no bigger than a thumb-nail, while his Cactus patch is but a memory.

Another collector who once might justly have prided himself upon a representative collection of Cactus, categorically arranged, has just lately junked truckloads of Cactus to make room for Euphorbias from South Africa and Southwest Asia.

Since Cacti are indigenous to the two Americas, and find their most extreme exemplification in the region of the Great Southwest within a few hundred miles of Los Angeles, it should be the pride of we Western Americans to preserve and perpetuate these plants.

Yet it appears that our Cactus is most highly prized in the Eastern states and in European countries. While we eagerly import succulents from foreign lands, foreign collectors of rare plants are busy importing Cactus from us.

It is easy to comprehend why many of our feminine members have gone sour on Cactus and sweet on Succulents because contact with spines and glochids has been painful, while "hens and chickens" may be cuddled and "baby-toes" be pinched with impunity.

Naturally the commercial collectors and dealers must carry stock to suit their customers' fancies. Thus I find at Santa Barbara that two eminent gardeners, father and son, have passed up Cactus almost entirely in favor of a vast acquisition of Succulents to which they are constantly adding by importation, propagation and hybridization.

It was here that I beheld a pan of infant Euphorbias—

"One little, two little, three little Ingens,

"Four little, five little, six little Ingens—

Undeniably they were attractive, and it was a pleasure to see that they were looking as though they were living amicably together.

But I found tucked away in a corner fully a dozen unusual specimens of Echinopsis, any one of which would be a thing of joy for a true Cactophile to possess. Yet I doubt if any other visitor regarded it with favor.

When I began my trivial collection of Cactus 25 years ago, I didn't know an Echinopsis from a Thanatopsis—and I don't know much more now. But I relish hunting out rare Cactus in the forgotten corners of forsaken gardens quite as much as in prospecting for them on the open desert.

But what is one going to do when he visits a friend's collection and is hurried past Opuntias, Cereus and Echinocactus which he would like to examine, and is adjured to come look at what the collector considers her chief prizes in Echeveria, Senecio and Cotyledons?

I ask you: Are we becoming a society of Cactophobes who once started out as Cactophiles? Whither are we drifting, and how far?

Shall it come to pass that in my old age I shall be looked upon as the last of the tribe of Cactus Cranks (*Senilis Parvissimus*)?

CACTUS AND SUCCULENT SOCIETY

of America

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SECRETARY'S COLUMN

The DECEMBER MEETING of the Society will be held in the Los Angeles Public Library on Hope Street on Friday evening, December 19th, at 8 o'clock.

Mr. C. H. Hamilton of Flintridge, will show slides and tell about "A Few Glimpses of Oriental and Occidental Gardens." This should be a most interesting meeting. Since it is the last meeting of the year, let's try to make it the biggest. Invite your friends to come with you.

The year has passed quickly. The work done by the Society has not been spectacular. The growth has been quiet and steady. At this writing the last membership card sent out was numbered nine hundred. The middle of last January the number was four hundred and seventy-five. If I may repeat what I have said before, this growth is largely due to the work of individual members in interesting their friends. Mr. Otto Roller of New Jersey stands out prominently in this respect. There are many others. The greater the membership, the larger and better the Journal can be made.

President Willis will long be remembered for the very splendid Show at the Ambassador in May. This required an immense amount of work on his part and the results showed what can be done. I doubt whether any show in years will equal that one in size.

The one pleasant feature that has made bright the hours of work necessary to carry on the secretarial work has been the many words of praise for our Journal and the good wishes for the continuance of the work. The "complaints" were from those who failed to receive the Journal due to non-delivery. This indicates its value. How much better to receive inquiries than to have its absence unnoted.

It is not too late to send in the name of that friend to whom you wish to present a year's membership.

One of our members passes on this bit of valuable information. When ordering U.S. Government publications, if you wish to save time, address your communication to Superintendent of Documents, Government Printing Office, Washington, D. C., rather than to the Department of Agriculture.

The drawing of names for plants at the meetings has been approved and criticised. There are arguments pro and con. Shall the drawings be continued during the coming year? Will you express your opinion in a letter to the secretary?

There must be among the large number of members much hidden talent that can be used for the Society's good. Can you not assist in locating those people who have knowledge of cacti and other succulents and who will be willing to share it with others? Have you that talent yourself?

What type of meetings would you plan were you responsible for the planning? Would you plan for demonstrations of seed planting, grafting, making cuttings or soil mixing? This is your Society. Its officers are at your service. Let us know your wishes.

May I take this opportunity to thank my fellow members for their many expressions of good will during the year?

The Season's Greetings to all!

BOYD L. SLOANE,
1421 Dominion Avenue,
Pasadena, California.

The following first year seedlings are available at 50c each, $5.00 per dozen. This is the last time these seedlings will be offered at this price as the supply is limited and those remaining will be grown to second year size before being offered again.

Lemaireocereus dumortieri
Lemaireocereus stellatus
Lemaireocereus de Mixteca
Lemaireocereus de Toliman
Lemaireocereus Quarotaroensis
Lemaireocereus Weberii
Lemaireocereus chiotilla
Pachycereus marginatus
Coryphantha glandulifera
Coryphantha bumamma
Coryphantha cornifera
Echinocactus Vaupelianus
Cephalocereus cometes
Mammillaria sp. from Mexico

The Following RARE CACTUS SEED Are Available

50 sp. Mexican OPUNTIA, with native names, 1 gram of each	50 grams	$5.00
OPUNTIA TUNICATHA and OPUNTIA MOELLERIANA	per gram	1.50
ECHINOCACTUS MOELLERIANA, new and very rare	per gram	3.00
ECHINOCACTUS HEXAEDROPHORUS, dark green, red spines	per gram	3.00
ECHINOCACTUS PILOSUS, red spines, white hairs	per gram	2.50
MAMMILLARIA KLISSINGIANA and LEUCHTENBERGIA PRINCIPIS	100 seed	1.00
MAMMILLARIA MICROMERIS sp. with soft spines, "rabbits hair"	100 seed	1.00
ASTROPHYTUM, many sp. at various prices, ASTROPHYTUM ORNATUM	per gram	2.00
CEPHALOCEREUS ROYENII, rare plant from Porto Rico	per gram	1.50
CORYPHANTHA RUNYIONII, rare plant similar to MACROMERIS but with large pinkish blooms	per gram	.25
SELENICEREUS sp. very fertile seeds of a beautiful plant	per gram	.50
HYLOCEREUS POLYRHIZUS, Blooms 14 inches in diameter, reddish on outside, white inside, 3 angled plant similar to H. Ocamponis	per gram	2.00
CEPHALOCEREUS SENILIS, true "Old Man," about 400 seeds	per gram	1.50

RARE PLANTS AND CUTTINGS

CACTUS INTORTUS and another species nearly as large, with a CEPHALIUM at least 2 inches tall, or taller when available, 15 to 20 lbs. postpaid....$15.00
CEPHALOCEREUS ROYENII, cuttings of the flowering branches, per foot.....$ 5.00
These cuts are very hairy and have the flowering areoles. Sizes to 30 inches.
LEPTOCEREUS QUADRICOSTATUS, of interest to collectors, per foot.....$ 2.00

NOTICE

Because of the fact that the Mexican Government has passed a law prohibiting the export of Cactus Seed, there is a very real danger that unless you order the Mexican species as soon as possible, the supply on hand will be exhausted before planting time comes around. A deposit will hold the seed until you are ready.

CORRESPONDENTS WANTED

I am very anxious to correspond with fanciers and collectors of Cacti, Euphorbia and Succulents in all parts of the world. Also, persons wishing to make exchanges of seed or plants, please list your plants, stating prices at which you value them and size or a description of plant if the Botanical name is not known.

EUGENE R. ZIEGLER, Spencerport, N. Y.

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Native and foreign Cactus, Aloes, Echeverias, Sedums, Agaves, grafts and cristates. Watson's "Cactus Culture," $1.50.
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